

OPTICAL ROUTING USING A STAR SWITCHING FABRIC

ABSTRACT

In one embodiment, a router includes a plurality of  
5 line cards each operable to receive at least one packet  
comprising an identifier associated with a destination  
element external to the router. Each line card includes  
a look-up table operable to facilitate routing the  
received packet toward the destination element based at  
10 least in part on the identifier. The router further  
includes a plurality of optical transmitters each  
associated with one of the line cards and operable to  
generate at a specified wavelength an optical router  
signal comprising at least a portion of the packet  
15 received by the line card associated with that optical  
transmitter. The router also includes a star switching  
fabric operable to receive a plurality of optical router  
signals from the plurality of optical transmitters and to  
communicate to each of a plurality of tunable filters a  
20 substantially similar set of at least some of the  
plurality of optical router signals. Each of the  
plurality of tunable filters is operable to selectively  
tune to a wavelength of one of the plurality of optical  
router signals to facilitate communication of the packet  
25 associated with that optical router signal toward the  
destination element.